

What is claimed is:

1. A sputter system comprising:

a pallet capable of being biased at a plurality of different bias voltages, the pallet being movable along a path of travel;

a plurality of target-cathodes disposed along said path of travel, wherein each said target-cathode can be powered at different voltages; and

a controller configured to selectively vary the target-cathode voltage and the pallet bias voltage while the pallet moves along the path of travel and the pallet is in front of more than one of said plurality of target-cathodes.

2. The sputter system of claim 1 in which said target-cathodes are spaced apart along the path of travel by a distance less than a length of the pallet.

3. The sputter system of claim 1 in which said target-cathodes are disposed on both sides of the path of travel.

4. The sputter system of claim 1 wherein said plurality target-cathodes include targets made from different materials, wherein each said material is characterized by a preferred pallet bias voltage.

5. The sputter system of claim 4 wherein said plurality of target-cathodes are successively set to their respective preferred pallet bias voltages.
6. The sputter system of claim 1 in which the controller is configured to supply a voltage bias to pairs of the cathode targets in turn within a cycle time.
7. The sputter system of claim 1 wherein said controller includes a timing circuit for synchronizing changes in the target-cathode voltages with changes in the pallet bias voltage.
8. The sputter system of claim 6 wherein the pallet is configured to move a minimal distance along the path of travel within the cycle time.
9. The sputter system of claim 1 further including a schedule for selectively supplying voltages according to time.
10. The sputter system of claim 1 further including a schedule for selectively supplying voltages according to position of said pallet.

11. The sputter system of claim 9 wherein said schedule further includes timing and sequencing of voltages information.

12. A method of sputtering layers of materials onto substrates carried by a pallet, comprising the steps of:

moving the pallet along a path of travel, the pallet being capable of having a bias voltage put on it;

applying a bias voltage to said pallet, said pallet voltage being variable;

applying a plurality of voltages to a plurality of target-cathodes for sputtering said materials from said plurality of target-cathodes; and

selectively varying said plurality of target-cathodes voltages and said pallet bias voltage while said pallet is moving in front of said plurality of target-cathodes.

13. The method of step 12 wherein selectively varying said plurality of target-cathodes voltages and said pallet bias voltage is done according to a predetermined sequence.

14. The method of claim 12 further comprising a step of providing the adjacent sets of targets spaced apart along the path of travel by a distance less than a length of the pallet.

15. The method of claim 12 further comprising moving the pallet by a minimal distance along the path of travel within the cycle time.

16. The method of claim 12 wherein said step of selectively varying includes using a timing circuit to synchronize changes in the said target-cathode voltage with said pallet bias voltages.

17. The method of claim 12 further comprising the step of generating a schedule for selectively varying said plurality of target-cathodes voltages and said pallet bias voltage while said pallet is moving and in front of said plurality of target-cathodes.

18. The method of claim 17 wherein said selectively varying of said plurality of target-cathodes voltages and said pallet bias voltage is done as a function of time.

19. A magnetic recording medium, comprising
a substrate for depositing layers thereon;

a seed layer sputter deposited onto said substrate for defining the growth of subsequent layers;

a magnetic layer sputter deposited onto said seed layer wherein information is recorded to and retrieved from; and

a protective overcoat sputter deposited onto said magnetic layer for protecting said magnetic layer;

wherein said sputter deposition is done by applying a bias voltage to said pallet, said substrate voltage being variable; applying a plurality of voltages to a plurality of target-cathodes for sputtering said materials from said plurality of target-cathodes; and selectively varying said plurality of target-cathodes voltages and said substrate bias voltage while said substrate is moving and in front of said plurality of target-cathodes.

20. A sputter system comprising:

means for supplying a different voltage to each of said plurality of target-cathodes;

means for transporting a pallet containing a plurality of substrates in front of said plurality of target-cathodes while said at least one target-cathodes is set to a voltage;

means for supplying a variable bias voltage to said pallet while said pallet is moving; and

means for synchronizing the bias voltage on said pallet with the target-cathode voltage.